

Comparisons of Job Characteristics

Focus Occupation: [Chemical Engineers \(17-2041\)](#)

Associated Occupation: [Engineering Technicians, Except Drafters, All Other \(17-3029\)](#)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 80

Focus Occupation: Chemical Engineers (17-2041)

Associated Occupation: Engineering Technicians, Except Drafters, All Other (17-3029)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Engineering and Technology	5.7	17.6	24.1	>>	Current knowledge level is likely more than sufficient
Mathematics	9.2	16.6	19.4	>	Current knowledge level is likely sufficient
Mechanical	6.8	16.6	11.5	<<	Extensive education and/or training may be required
Computers and Electronics	8.4	16.2	12.7	<<	Extensive education and/or training may be required
Design	5.2	15.1	15.2	0	Current knowledge level may be sufficient
Production and Processing	6.0	13.3	15.4	>	Current knowledge level is likely sufficient
Physics	4.3	12.9	16.9	>>	Current knowledge level is likely more than sufficient
Telecommunications	3.9	7.4	4.4	<<	Extensive education and/or training may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 33

Focus Occupation: Chemical Engineers (17-2041)

Associated Occupation: Engineering Technicians, Except Drafters, All Other (17-3029)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Operation Monitoring	6.6	12.1	9.8	<	A higher skill level may be required
Quality Control Analysis	5.9	11.5	9.6	<	A higher skill level may be required
Mathematics	6.2	10.8	14.7	>>	Skill level is likely more than sufficient
Troubleshooting	4.5	10.6	10.4	0	Current skill level may be sufficient

Equipment Maintenance	3.5	10.4	1.0	<<	Extensive development of skills in this area may be required
Equipment Selection	3.3	9.4	5.8	<<	Extensive development of skills in this area may be required
Repairing	3.4	9.4	1.0	<<	Extensive development of skills in this area may be required
Technology Design	2.6	7.0	8.5	>	Skill level is likely sufficient
Installation	1.7	6.2	1.0	<<	Extensive development of skills in this area may be required
Programming	2.2	4.9	5.4	>	Skill level is likely sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities

Similarity of Focus Occupation to Associated Occupation: 90

Focus Occupation: Chemical Engineers (17-2041)

Associated Occupation: Engineering Technicians, Except Drafters, All Other (17-3029)

Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Visualization	7.5	12.3	11.7	0	Current ability level may be sufficient
Information Ordering	9.9	12.0	15.1	>>	Current ability level is likely more than sufficient
Mathematical Reasoning	6.3	11.2	14.2	>>	Current ability level is likely more than sufficient
Flexibility of Closure	7.8	10.5	10.3	0	Current ability level may be sufficient
Perceptual Speed	7.4	10.3	9.7	0	Current ability level may be sufficient
Number Facility	6.3	10.2	13.4	>>	Current ability level is likely more than sufficient
Visual Color Discrimination	6.4	9.6	8.5	<	Some improvement in abilities may be required
Memorization	5.6	7.5	7.2	0	Current ability level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

There are no common work activities.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 81

Focus Occupation: Chemical Engineers (17-2041)

Associated Occupation: Engineering Technicians, Except Drafters, All Other (17-3029)

Tools and Technologies	Exclusivity
Business function specific software	1
Computers	1
Content authoring and editing software	1
Data management and query software	1

Development software	4
Finance accounting and enterprise resource planning ERP software	2
Gas analyzers and monitors	10
Heating equipment and parts and accessories	19
Industry specific software	1
Integrated circuits	18
Laboratory centrifuges and accessories	13
Laboratory decanting and distilling and evaporating and extracting equipment and supplies	19
Laboratory filtering equipment and supplies	51
Pipettes and liquid handling equipment and supplies	16
Pumps	9
Spectroscopic equipment	10
Viewing and observing instruments and accessories	4
Vision protection and accessories	3
Water treatment and supply equipment	21

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.